THE

ONTARIO WATER RESOURCES

COMMISSION

REPORT ON

WATER POLLUTION SURVEY

OF THE

RIDEAU RIVER

1963

REPORT

Ontario Water Resources Commission

Municipality Rideau River Date of Inspection May 27,28,29&Aug. 7/63

Re: Pollution Survey

Field Inspection by L. South, Assistant District Engineer Report by L. South, P. Eng.

On the above dates samples were obtained from the Rideau River. Similar samples were obtained last year and it is expected that a third set will be obtained during the summer of 1964. The three sets of samples will be the basis of a report on the sanitary quality of the river. This presentation is merely a summary of the conditions as noted in 1963.

Nature of Survey & Report

Due to the limited time and staff available samples were obtained from shore, bridge and canal locks. Bacteriological samples were obtained at all sampling points, whereas sanitary chemical samples were taken at the upstream end and mouth of the watercourse and also downstream of any known large sources of pollution.

Conditions

The river flow was normal for this time of year. The maintained minimum flow for navigational purposes is 300 cfs.

Sample Results

Some of the pertinent Commissions objectives for the quality of surface waters are as follows;

- coliforms, not to exceed 2,400/100 ml.
- 5-Day Biochemical Oxygen Demand (BOD) not to exceed 4.0 parts per million.

- phenol equivalents, not to exceed an average of 2 parts per billion and a maximum of 5 parts per billion.

In regard to bacterial quality the Commission's objective was not met at the Hurdman & Billings Bridges in Ottawa and near Black Rapids and the mouth of Mosquito Creek in Gloucester Township. The pollution in Ottawa would be due to private and municipal sewer discharges to the river. These samples were obtained prior to the commencement of operation at the City of Ottawa's sewage treatment plant. It is expected that future samples will indicate an improvement in this area. The most likely source of pollution in the noted part of the Township of Gloucester would be from private residential sewage disposal systems. Consideration is now being given to the development of a joint sewage treatment plant in this area to serve the Townships of Nepean and Gloucester.

The objective for BOD was not met in the Canal at Wellington Street and Bronson St. in Ottawa. Since the coliform counts at these points was low it is likely that the source of pollution is from industry.

In addition relatively high BOD was noted in the river upstream of the Carleton Heights sewage treatment plants. Additional samples obtained at this time indicate that the source is the effluent discharged from the Uplands Air Force sewage treatment plant. In general past experience has indicated a satisfactory degree at this plant. However, these results indicate the need for

reviewing the situation.

The high coliform concentration noted at the Carleton Lanark Counties border can be attributed to the discharge of inadequately treated sewage from Merrickville. Negotiations are now taking place for the construction of sewage treatment at this location.

SUMMARY

This review indicates that the upstream end of the Rideau Waterway is in a satisfactory condition in regard to pollution and the downstream end in an unsatisfactory condition. Much of the problem will now be resolved due to the operation of the City of Ottawa sewage treatment plant and the proposed installation at Merrickville.

The results show the need for sewage treatment in the section of Gloucester Township near Mosquito Creek and the possibility of improved treatment at the Uplands R.C.A.F. base.

RECOMMENDATION

The Commission should continue in its efforts to improve the sanitary quality of this watercourse in the downstream section and prevent the development of any new sources of pollution.

All of which is respectfully submitted,

District Engineer: H. Browne

Approved by: K.H. Sharpe, Director

/mh

ONTARIO WATER RESOURCES COMMISSION
BACTERIOLOGICAL EXAMINATION
SEWAGE AND SURFACE WATERS

Report to L. South

File Rideau River Survey

Address

Date Aug. 13/63

This is not a chemical report

Legend: – "<" means less than ">" means greater than

Date Sampled	Date Analyzed	Lab. No.	LOCATION		Coliforms per 100 ML MEMBRANE FILTER
Aug.7/63	Aug. 9/63	R-11334	R-47.4	Merrickville, East end of Canal Lock	50
		R-11335	R-47.2	" Bay east end	20
		R-11336	R-47.0	" Rtwy Bridge	80
		R-11337	R-59.8	Downstream ofOld Sly Lock Bridge	790
		R-11338	R-60.1	Old Sly Lock Bridge Smiths Falls	110
		R-11339	R-61.3	Bridge below C.N.R., W. end Smiths	Falls 0
		R-11340	R-69.1	Rideau Ferry	30
		R-11341	RT-73.7	Tay R. @ N. Elmsley, Bathurst Line	East of Perth 910
		R-11342	R-82.3	Rideau Lake Narrows Lock	40
		R-11343	R-87.6	Lock @ Newboro	940

Fred A. Voege

DIRECTOR OF LABORATORIES

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

All analyses except pH reported in p.p.m. unless otherwise indicated

RIVER SURVEY

1 p.p.m. = 1 mgm. / litre = 1 lb./100,000 Imp. Gals.

Watershed: RIDEAU RIVER SURVEY Report to: L. SOUTH c.c.

Watercourse:

Date Sampled: AUG. 7/63 by: L. SOUTH

Sample Point No.	Lab. No.	5-Day B.O.D.	Solids			D.O.	Sample Temp. C			Bacteriological Laboratory	
			Total	Susp.	Diss.					Lab. No.	M.F. Coliform Count per 100 ml.
LAB. NO.	5- BOD	TURBIDITY IN SILICA UNITS	NITROGEN AS N: FREE AMMONIA	NITROGEN AS N: TOTAL KJELDAHL	NITROGEN AS N: NITRITE	NITRATE		PHENOLS IN PPB			
R-3480	1.0	0.8	0.22	0.52	0.0	0		4			
R-3481	1.2	0.8	0.16	0.71	0.0	0		-			
R-3482	1.3	1.5	0.16	0.84	tr	tr		3			

R-3480	RT 73.7	Tay R. @ N. Elmsley, Bathurst Line East of Perth
R-3481	R 87.6	Lock @ Newboro
R-3482	R 59.8	Downstream of Old Sly Bridge

ANALYSES OF STREAM SAMPLES

COUNTY OF CARLETON

RIDEAU RIVER

Sample Point No.	Location	Date of Sample	5-Day BOD (in ppm)	Turbidity in Silica Units	Total Coliform Count per 100 ml.
R.0.1	Rideau River at Sussex Ave. - City of Ottawa	May 28/63	2.1	3.8	104
R.1.0	Rideau River at St. Patrick St. Bridge	"	2.1	3.5	142
R.1.5	Rideau River at Rideau St.	"	2.2	3.5	200
R.2.7	Rideau River at Hurdam Bridge	"	1.8	3.3	6,800
R.5.1	Rideau River at Billings Bridge	"	2.0	2.8	9,800
R.7.0	Rideau River at Hogs Back	"	2.0	3.8	164
RC.0.6	Rideau Canal at Wellinton ST.	"	4.0	3.5	28
RC.1.6	Rideau Canal at Pretoria Bridge	"	3.5	3.5	14
RC.3.5	Rideau Canal at Bronson Ave.	"	4.4	6.0	12
RC.5.5	Rideau Canal at Hogs Back	"	2.4	5.5	112
R.7.3	Rideau River just upstream from Carleton Heights S.T.P. outfall	"	4.2	27	420
R.11.OW	Rideau River at Black Rapids Locks - west side	May 29/63	1.4	3.1	30
R.11.OE	Rideau River at Black Rapids Locks - east side	"	1.5	3.1	11,000
R.13.1	Rideau River just downstream from mouth of Mosquito Creek	"	1.7	2.6	23,000

ANALYSES OF STREAM SAMPLES

COUNTY OF CARLETON

RIDEAU RIVER

Sample Point No.	Location	Date of Sample	5-Day BOD (in ppm)	Turbidity in Silica Units	Total Coliform Count per 100 ml.
R.13.3	Rideau River just upstream from mouth of Mosquito Creek	May 29/63	1.6	4.0	130
R.14.9	Rideau River just downstream from Carleton Lodge S.T.P. outfall	"	1.5	4	240
R.15.1	Rideau River just upstream from Carleton Lodge S.T.P. outfall	"	1.6	4	190
RE.17.8	Rideau River at Manotick Bridge - E. channel	"	1.5	2.3	50
RW.18.2	Rideau River at Manotick Bridge - W. channel	"	2.1	2.3	98
R.23.7	Rideau River at new Kars Bridge	May 27/63	3.5	1.8	2
R.34.1	Rideau River at Becketts Landing Bridge	"	1.9	2.0	116
R.41.8	Rideau River at Burritts Rapids Dam	"	1.9	2.6	12
R.43.9	Rideau River at County Boundary	"	1.9	2.3	26,000